

TITLE

LEAKAGE NULLING RECEIVER CORRELATOR STRUCTURE AND
METHOD FOR ULTRA WIDE BANDWIDTH COMMUNICATION
SYSTEM

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ABSTRACT OF THE DISCLOSURE

5 A receiver correlator structure for an ultra wide bandwidth
communication system includes an antenna, a mixer, a bandpass filter, and a
convertor. The receiver receives, via the antenna, an ultra wide bandwidth
signal comprising a sequence of wavelets of particular shapes and positions,
10 and transmits the received ultra wide bandwidth signal to the mixer. The
mixer also receives and mixes with the received ultra wide bandwidth signal
a local ultra wide bandwidth signal comprising a sequence of wavelets of
particular shapes and positions correlated to the received ultra wide
bandwidth signal. The bandpass filter removes the DC components from the
15 mixed signal, and provides the resultant signal to the convertor. The receiver
structure eliminates the local ultra wide bandwidth signal AC bias and DC
bias terms and 1/f noise, yet detects long sequences of logical 1's and 0's, and
allows operation with reduced bandwidth convertors.

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